

REMARKS

Applicants have amended claims 1, 14 and 20. Claim 21 has been cancelled. Claims 1-12 and 14-20 are now pending.

Applicants thank the Examiner for the courtesies extended and the helpful comments provided during the telephone interview of April 21, 2004. The following comments are intended to also constitute a summary of the interview.

In the Office Action, the Examiner rejected claims 1-21 under 35 U.S.C. 102(e) as being anticipated by Takigawa et al. (U.S. Patent No. 6,097,744). Applicants traverse this rejection, at least for the following reasons.

Applicants submit that Takigawa et al. does not disclose or suggest the combination now recited in claims 1 and 20 comprising spaces each having side walls forming a rounded intersection. Support for this recitation can be found in Applicants' specification at, for example, page 9, lines 14-16, where it is indicated that "in the supply water path groove portion 22, corner portions 22a are rounded in order to lower the flow resistance of the cooling water flowing through the heat sink 10a and reduce its stagnation." The language of claim 1 has been changed to clarify that the side walls have rounded intersections rather than being rounded in the cross-section of the apertures as shown in Figs. 8A-8C of Takigawa et al. Claim 20 has been amended to include the limitation of side walls having a rounded intersection. The curvature of the cross-section of the apertures in Figs. 8A-8C of Takigawa et al. is a natural result of the etching process used to form the channels as described in col. 22, lines 6-10. Takigawa et al. further explains in col. 22, lines 10-13 that the sharp projections formed by that etching process "cause a turbulence

in the cooling water flowing through the apertures 32C.” This is the opposite of one of the purposes of the rounded corner portions of the present invention, which is to lower flow resistance as explained, for example, in Applicants’ specification at page 9, lines 14-17, and page 10, lines 21-25. Furthermore, Takigawa et al. teaches the desirability of inducing turbulent flow by bending the flow path at col. 34, lines 25-32 and shows sharp bends in the flow paths in all figures showing flow paths, including Fig. 1 showing prior art. Thus, Takigawa et al. – and especially that portion of Takigawa et al. relied on primarily by the Office Action in rejecting claims 1 and 20, namely, Figs. 2A-2E and 4A-4D, does not incorporate side walls forming a rounded intersection at a location proximate any holes and therefore does not provide the aforementioned advantages outlined in the specification. For at least this reason, Applicants respectfully request reconsideration and withdrawal of the rejections applied to independent claims 1 and 20, and dependent claims 2-12 and 14-19.

Dependent claim 14 has been amended to correct antecedent error in that it now refers to “holes” rather than a “hole” and refers to fluid being injected through the holes into the second space rather than the first space.

For at least the foregoing reasons, Applicants submit that all of pending claims 1-12, and 14-20 patentably distinguish over the references applied against the claims in the pending Office Action. Accordingly, reconsideration and withdrawal of all pending rejections is respectfully requested, along with an indication of allowance for all of the pending claims. A favorable action is awaited.

CONCLUSION

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

Except for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310.

This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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